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A List of the Butterflies and Skippers of Mount Revelstoke and Glacier National Parks, British Columbia, Canada (Lepidoptera)

David L. Threatful

P. O. Box 190, Revelstoke, British Columbia, Canada V0E 2S0[1]

Abstract. An annotated list of 63 species of butterflies and skippers found in Mount Revelstoke and Glacier National Parks, British Columbia, Canada, has been complied. Eight additional species are considered to be likely additions to the known fauna, and one previous record to be a mislabelled European specimen. The alpine species present on the two highest peaks near Revelstoke are also listed.

Introduction

Mount Revelstoke and Glacier National Parks are located west of the Rockies in the Columbia Mountains of southeastern British Columbia, Canada. The Monashee, Selkirk, and Pucell Ranges form the portion of the Columbia Mountains in the vicinity of the parks. Mount Revelstoke National Park (M.R.N.P. henceforth) encompasses 25,900 hectares and is located in the western part of the Selkirk Mountains. It is approximately bounded by latitudes 51°00′-51°15′ North, longitudes 117°50′-118°15′ West. Glacier National Park (G.N.P. henceforth) encompasses 135,000 hectares and is located in the Selkik and Purcell Ranges, with the Beaver River Valley separating the two ranges in the park. G. N. P. is bounded by latitudes 51°00′-51°30′ North, longitudes 117°10′-118°00′ West. The town of Revelstoke lies at the southwest edge of M.R.N.P. on the Columbia River between the Monashee and Selkirk Ranges.

Other than a small amount of collecting by Mark Hobson and John G. Woods, no previous study has been conducted on the butterflies of these parks. The reason for the paucity of collecting is probably the inhospitable climate and terrain. The mountains rise precipitously from the deep valley floors (450 m) up to a maximum of 3387 m elevation. The only access roads are the Trans-Canada Highway (which skirts M.R.N.P. and bisects G.N.P.) and a road to the summit of Mt. Revelstoke. Many of the mountain trials are long and strenuous to climb. Dense coniferous forest (Columbia Forest 456-1220 m, subalpine forest above 1220 m) covers most of the area below treeline, with the only breaks in the forest being due to cliffs, streams, avalanches, and the activities of man. Treeline is at about 1800-2000 m or occasionally higher, above

Annual precipitation in the parks is generally 150-200 cm, but parts of G. N. P. receive up to 350 cm. Much of the precipitation occurs in the

[1]Current Address: 1501 32nd Street, #14, Vernon, British Columbia V1T 5K4

winter, resulting in heavy snow packs which are slow to melt. Summers are generally warm with frequent cool rainly intervals. At the lower elevations (Columbia River Valley floor) there are only a little over 4 frost-free months (127 days), with the area near the town of Revelstoke (elevation 456 m) being somewhat warmer and drier (100-150 cm) than the rest of the park area. Much of the butterfly fauna resident in the Rocky Mountains (Banff and Jasper National Parks, Alberta) is missing from this area, probably due to the high precipitation and late spring combined with the lack of open habitats below treeline.

Data for this report were compiled from collections made in 1980, 1981 and 1983 and general observations from 1965 to 1979. All species reported were collected by the author under the authority of a Parks Canada volunteer agreement. The Biosystematics Research Institute, Ottawa, Ontario, Canada, confirmed the identification of all specimens to species level. A representative collection has been placed in the parks collection at Glacier Park nature center and selected specimens retained by the Biosystematics Research Institute. Specific collection data have been placed in the fauna files maintained by the park naturalists at Glacier Park nature center. Sixty-three species are confirmed for the parks. An additional eight are possible additions. A species list for the alpine areas of Mt. Cartier, Selkirk Range, and Mt. Begbie, Monashee Range (both 12-13 km south of Revelstoke) is given at the end. Mt. Begbie was collected 7 August 1983 and Mt. Cartier on 4 August 1983. These specimens are in the collection of John H. Shepard. Experience with the British Columbia butterfly fauna leads me to believe that the majority of the species regularly occurring in the parks are now documented.

The scientific names employed generally conform to those used in Howe (1975). The subspecies designation should be treated with caution because the taxonomic status of many species in this area is only poorly known.

For each species, the abundance, habitat, altitudinal range, flight period, and park(s) in which it is found are given. Five terms are used to describe abundance:

(1) Common: a species usually encountered every day in numbers,

(2) Uncommon: a species encountered on most days usually in small numbers,

(3) Rare: a species of which few are encountered, and encounters are infrequent during a year,

(4) Extremely rare: a species not seen most years with few records for any given location,

(5) Local: a species known only from restricted localities and habitats. May be common or rare depending upon the circumstances.

The descriptions of habitats and elevations are based on observation within the parks. Flight seasons are normally fairly constant, although during inclement weather emergence may be delayed by two or three weeks. There are a few species that appear to be found in only one of the

parks. Question marks indicate that certain species may occur in both parks, although thus far having been found only in one park.

Systematic Account

Hesperiidae (Latreille 1809)

1. **Thorybes pylades** (Scudder 1870): Abundance variable, rare to uncommon and local; forest edges, clearing, and roadsides up to 550 m; mid-May through June; M.R.N.P. only.

2. **Erynnis icelus** (Scudder and Burgess 1870): Common: open forest edges and roadside clearings; 456-914 m; May to early June; both parks.

3. **Pyrgus centaurae loki** (Evans 1953): Local and uncommon; dry alpine tundra and occasionally moist tundra; 2042-2134 m; July; both parks (Selkirk and Purcell Ranges). This species and *Hesperia comma* are found at higher elevations than any other Hesperiidae within the parks.

4. **Pyrgus ruralis** (Boisduval 1852): Rare to uncommon; dry grassy clearings, gravel road shoulders with short grass, and dry open areas where *Dryas* grows; 456-549 m; late April through June; M.R.N.P. only(?).

5. **Carterocephalus palaemon mandan** (W. H. Edwards 1863): Uncommon to common; wet grassy bogs close to forest edges; 457-1219 m; June and July; both parks.

6. **Thymelicus lineola** (Ochsenheimer 1808): Rare; open grassy areas such as fields and roadsides; one record for M.R.N.P. at 549 m in June. Appeared at Sicamous, B. C. 72 km west of Revelstoke several years ago and is rapidly spreading in all directions. The population within the parks is still expanding. The nearest collection site outside the parks was 15 km south of Revelstoke at 456 m in June 1981.

7. **Hesperia comma manitoba** (Scudder 1874): Rare and local; open subalpine forests, clearings, bogs and rockslides near timberline; 1859-2042 m; July and early August; both parks (Selkirk and Purcell Ranges).

8. **Polites themistocles** (Latreille 1824): Rare; grassy openings near forest edges and fields up to 610 m; June to early July; M.R.N.P. only.

9. **P. mystic** (W. H. Edwards 1863) ssp.: Rare; grassy openings near forest edges and fields up to 549 m; June and early July; M.R.N.P. only.

10. **Ochlodes sylvanoides** (Bosiduval 1852) ssp.: Very common; forest openings and edges, roadsides; up to 549 m; late July to mid-September; M.R.N.P. only.

11. **Amblyscirtes vialis** (Edwards 1862): Uncommon; clearings, forest edges, and along forest roads up to 762 m; late May to early July; M.R.N.P. only.

Papilionidae Latreille 1809

12. **Papilio zelicaon zelicaon** (W. H. Edwards 1852): Common to uncommon; forest edges, alpine meadows, mountain tops, riparian areas; 456-2438 m; mid-May to August; both parks.

13. **P. glaucus canadensis** (Rothschild and Jordan 1906): Common; forest edges, clearings, riparian areas, and open areas generally; p up to 1219 m; late May to mid-July.

14. **P. rutulus rutulus** (Lucus 1852): Extremely rare, three records for district; one record from G.N.P. (habitat, date, and elevation unknown), one record from Revelstoke (456 m) and one record in Rogers Pass (1300 m). The main blend zones for *P. rutulus* and *P. glaucus* are further west in the Okanagan-Shuswap Districts and south at the north end of Kootenay Lake.

15. **P. eurymedon** (Lucas 1852): Uncommon; riparian and open areas close to open forest edges and clearings, sometimes in association with *Ceanothus velutinus*; up to 640 m; late May to mid-July; M.R.N.P. only.

Pieridae Duponchel 1832

16. **Neophasia menapia tau** (?) (Scudder 1861): Uncommon; near forest edges; 518-2042 m; mid-July to mid-September; M.R.N.P. only(?).

17. **Pieris occidentalis occidentalis** (Reakirt 1866): Uncommon to common; roadsides, open forest edges, clearings, dry alpine tundra; 456-2438 m; late April to October; both parks (Selkirk and Purcell Ranges). At low elevations the early spring specimens are darker and sometimes smaller than summer specimens. At high elevations there is only the summer form present (mid-July to mid-August).

18. **P. napi** (Linnaeus 1758) ssp.: Common to uncommon; clearings in dense forest and forest edges along roadsides; 456-1859 m; late April to mid-August; both parks. At low elevations the summer brood is usually lighter than the spring brood. At high elevations only the darker form appears to be present.

19. **P. rapae** (Linnaeus 1758): Uncommon to common; widespread, but mostly near human habitations; 456-549 m; late April to early October, M.R.N.P. only (?).

20. **Anthocaris sara** Lucus 1852 ssp.: Common; open forest edges, roadsides, and clearings; 456-640 m; late April to early July; M.R.N.P. only (?).

21. **Colias philodice eriphyle** W. H. Edwards 1876: Common; open areas such as roadsides, clearings, forest edges, and dry areas of alpine meadows; 456-1829 m; late April to October; both parks.

22. **C. eurytheme** Boisduval 1852: Rare to uncommon; roadsides, fields, clearings, open forest edges; 456-762 m; mid-July to October; M.R.N.P. only. This species is probably a migrant to this area since it is not seen every year.

23. **C. nastes streckeri** Grum-Grischimailo 1985: Uncommon and local; barren mountain ridges and dry alpine tundra; probably mid-July to mid-August; one record for 2499 m on Dawn Mt., Purcell Range, G.N.P.

24. **C. pelidne minisni** Barnes 1895: Extremely rare; one record at 2438 m in G.N.P. on a ridge north of Dawn Mt. on the border of G.N.P. (could be a wind blown stray from lower down), 17 August 1981.

25. **Lycaena cupreus henryae** (Cadbury 1937): Rare and local; windswept barren ridges and rockslides; 2017-2134 m; mid-July to late August; G.N.P. on the ridges near Dawn Mt. (Purcell Range) and on Avalanche Crest (Selkirk Range).

26. **L. helloides** (Boisduval 1852): Common, local in G.N.P.; open areas such as roadside, forest edges, and fields; 459-909 m; mid-May to September; both parks. At least double-brooded at Revelstoke, probably single-brooded in most of the park areas.

27. **L. mariposa** Reakirt 1866 ssp.: Uncommon to common; forest clearings, edges of bogs, riparian areas, moist clearings near trails; 488-1463 m; late June to late August; both parks.

28. **Satyrium acadica colinensis** (Watson and W. P. Comstock 1920): Common; forest edges in association with *Salix* ssp., clearings, and riparian areas; 456-914 m; late June to early September; both parks. Material from this area is of uncertain affinity, but is closest to *acadica coolinensis* (J. H. Shepard, *in litt.*).

29. **Callophrys spinetorum** (Hewitson 1867): Extremely rare; one record at 946 m along a roadside (Trans-Canada Highway) forest edge in early July in G.N.P.

30. **C. rosneri rosneri** K. Johnson 1976: Rare to uncommon; damp roadsides close to forest edges; up to 457 m; mid-May to mid-June; M.R.N.P. only.

32. **C. augustus iroides** (Boisduval 1852): Common; roadsides close to forest edges and in clearings; 456-762 m; late April to early June; M.R.N.P. only.

32. **C. eryphon eryphon** (Boisduval 1852): Common; open forest edges close to roadsides; 456-914 m; late April to early June; both parks.

33. **Everes amyntula albrighti** Clench 1944: Uncommon to rare; open forest edges around clearings, sometimes attracted to damp spots along roadsides; 456-549 m; mid-May to mid-June; M.R.N.P. only.

34. **Celastrina argiolus nigrescens** (Flectcher 1903): Common; open forest edges, damp forest roads, clearings, and riparian areas; 456-945 m; mid-April to early July; both parks. This is the first species to appear in the spring in the parks, other than those which overwinter as adults. Eliot and Kawazoe (1983) consider *nigrescens* to be a hybrid population between spp. *lucia* and *echo*.

35. **Glaucopsyche lygdamus columbia** (Skinner 1917): Uncommon; clearings, avalanche paths, forest edges, mountain meadows; 456-1829 m; late April to mid-August; both parks.

36. **Lycaeides idas atrapraetextus** (Field 1939): Rare; along roadside gravel banks close to forest edges; 731-1311 m; late June to mid-August; M.R.N.P. only(?). The species name is *idas*, rather than *argyrognomon* (Berstrasser), as a consequence of I.C.Z.N. Opinion 269 and work by L. G. Higgins (C. D. Ferris, *in litt.*).

37. **Plebejus saepiolus amica** (W. H. Edwards 1863): Common; roadsides, open forest edges, bog edges, damp grassy meadows, fields; 456-1219 m; June to August; both parks.

38. **Agriades rustica megalo** W. H. Edwards 1927): Rare, occasionally locally common; rockslides, barren rocky ridges, open subalpine forest edges; 1981-2164 m; mid-July to early September; both parks (Selkirk and Purcell Ranges). *A. franklinii* is a low elevation, coastal arctic species with Leguminoseae foodplants. *A. rustica* is a montane species which feeds on *Saxifraga* (C. D. Ferris, *in litt.*).

Nymphalidae Swanison 1827

39. **Speyeria atlantis beani** (Barnes and Benjamin 1926): Common; mountain meadows, forest edges, bog edges, clearings; 456-1676 m; late June to early August; both parks. The commonest and most variable *Speyeria* in area.

40. **S. hydaspe sakuntala** (Skinner 1911): Uncommon to common; damp places along forest edges and riparian areas, mountain meadows and subalpine forest clearings; 456-1829 m; early July to September; both parks.

41. **S. mormonia opis** (W.H. Edwardes 1874): Uncommon; mountain meadows adjacent to open subalpine forests; 1219-1981 m; July to early September; both parks.

42. **Boloria selene atrocostalis** (Huard 1927): Uncommon and local; edges of wet grassy bogs and meadows; up to 917 m; late May to mid-August; G.N.P. only.

43. **B. epithore chermocki** (E. and S. Perkins 1966): Common; open forest edges, edges of bogs, clearings, riparian areas, mountain meadows; 456-1920 m; late May to mid-August; both parks.

44. **B. astarte astarte** (Doubleday and Hewitson 1847): Rare, local; barren windswept ridges and scree slopes; 2438-2621 m; mid-July to mid-August; Dawn Mt. summit (Purcell Range) and Avalanche Crest (Selkik Range) in G.N.P., Mt. Williamson (2045 m); in M.R.N.P.

45. **Phyciodes tharos** (Drury 1773) ssp.: Common; roadsides, fields, clearings, forest edges; 456-914 m; late May to early August; both parks. Subspecific status uncertain.

46. **P. campestris campestris** (Behr 1863): Uncommon; roadside clearings, open forest edges; 456-945 m; late May to early August; both parks.

47. **P. mylitta mylitta** (W.H. Edwards 1861): Extremely rare; dry roadsides near clearings, forest edges, open fields; 456-457 m; mid-May to late September; M.R.N.P. only. Also found 19 air km. south of Revelstoke in a field in the Akolkolex River area at 456 m (May 18, 1970). Possible two broods south of Revelstoke, and at least one brood in the park.

48. **Euphydryas anicia anicia** (Doubleday and Hewitson 1848): Common; mountain meadows, rockslides, subalpine forest edges, clearings, ridges; 1859-2073 m; late June to early September; both parks (Selkirk and Purcell Ranges).

49. **Polygonia satyrus** (W.H. Edwards 1869): Common; open forest, damp forest roads, forest edges, and riparian areas; 456-1219 m; in

flight late March to October, adult overwinters; both parks. Subspecies '*neomarsayas*', sometimes attributed to this area, is probably not a valid subspecies but simply a form (C.D. Ferris, *in litt.*).

50. **P. faunus rusticus** (W.H. Edwards 1874): Common; open forest, damp forest roads, forest edges, and riparian areas; 456-1829 m; in flight late March to October, adult overwinters; both parks.

51. **P. zephyrus** (W.H. Edwards 1870): Uncommon; open forest edges, mountain meadows, subalpine clearings; 456-1981 m; in flight late March to October, adult overwinters; both parks. Found at higher elevations and visits flowers (Compositae) more frequently than the other two *Polygonia* species in this area.

52. **Nymphalis vau-album watsoni** (Hall 1924): Uncommon at times; forest edges along damp roadsides; 456-945 m; in flight late March to October, adult overwinters; both parks. There are major population fluctuations every few years.

53. **N. californica herri** Field 1936: Rare; open forest edges, roadsides, clearings; 456-549 m; in flight late March to October; M.R.N.P. only(?). Migrates into area. Adult probably does not overwinter in the parks.

54. **N. antiopa antiopa** (Linneaus 1758): Common; riparian areas, forest edges, clearings, and damp forest roads; 456-1036; in flight late March to October, adult overwinters; both parks.

55. **N. milberti milberti** (Godart 1819): Common; mountain meadows, forest edges, riparian areas, clearings; 456-1981 m; in flight late March to October, adult overwinters; both parks.

56. **Vanessa cardui** (Linnaeus 1758): Common during some years; open sunny areas, clearings, meadows; 456-1524 m; May to October, adult does not overwinter, but instead migrates into the area some years; both parks.

57. **V. annabella** (Field 1971): Rare to uncommon in some years; roadsides close to forest edges; 456-1219 m; May to October, adult probably does not overwinter, but instead migrates in during some years; both parks. Not seen every year.

58. **Vaqnessa atalanta rubria** (Furhstorfer 1909): Rare to uncommon during some years; open forest edges, riparian areas, clearings, 456-1067 m; May to October, adult probably does not overwinter, but instead migrates in some years; both parks. Not seen every year.

59. **Limenitis lorquini burrisoni** (Maynard 1891): Common; riparian areas, damp forest roads, and forest edges; 456-1097 m; late-June to early August; both parks. Seldom seen visiting flowers but comes to moisture, manure, and mud.

Satyridae Boisduval 1833

60. **Cercyonis pegala boopis** (Behr 1864): Locally common; grassy clearings along forest edges; one locality at 549 m along the main trail to the summit of Mt. Revelstoke, mid-July to late August, M.R.N.P. only.

61. **Oeneis chryxus chryxus** (Doubleday and Hewitson 1849): Rare

and local; bases of rockslides close to grassy clearings, edges of subalpine forests and rocky alpine draws; 1524-1981 m; July to mid-August; G.N.P. (Selkirk and Purcell Ranges) only(?).

62. **Oeneis melissa beani** Elwes 1893; Rare and local; rocky screes and barren windswept short grass ridges; 2134-2438 m; late June to late July; G.N.P. (Selkirk and Purcell Ranges) only(?).

Danaidae Duponchel 1844

63. **Danaus plexippus** (Linnaeus 1758): An extremely rare migrant; one record at 457 m in August, 1973 on the south edge of M.R.N.P.; one record at Revelstoke in July 1957.

Possible additional species

There are a few additional species which might occur in the parks, either because they have been collected elsewhere in the Revelstoke District or because suitable habitats have not been completely sampled.

64. **Erynnis persius fredericki** H. A. Freeman 1943: This species could enter G.N.P. through the Beaver River valley. A mid-May to early July flight period would be expected.

65. **Polites coras** (Cramer 1775): Another species which could enter G.N.P. through the Beaver River valley. A mid-June to August flight period would be expected.

66. **Parnassius phoebus smintheus** Doubleday 1847: One specimen was taken 13 km south of Revelstoke in June 1980 at 456 m, and six specimens were taken on Mt. Cartier at 1615 m 4 August 1983. One female taken 37 km southeast of Revelstoke on the Akolkolex Forestry Road at elevation 677 m on 19 July 1983. Nomenclature follows that of Ferris (1976). This species may occur in the parks where its foodplant (*Sedum* spp.) grows in open rocky areas.

67. **P. multicaudatus** (W. F. Kirby 1884): A single specimen taken in the Akolkolex Valley 30 km southeast of Revelstoke in July 1970 at 640 m.

68. **Euptoieta claudia** (Cramer 1775): One specimen seen but not collected on Dawn Mtn., Purcell Range, G.N.P. at 2499 m 12 August 1981.

69. **Boloria euphrosyne** (Linnaeus 1758): Jones (1951) listed this species as occurring in the Revelstoke area. *B. euphrosyne* is not found in the Nearctic, his record is a mislabelled European specimen (J. H. Shepard, *in litt.*).

70. **Limenitis arthemis rubrofasciata** (Barnes and McDunnough 1916): One specimen collected 13 km south of Revelstoke at 456 m on June 23, 1982, near the junction of the Old South Highway and the Akolkolex Forestry Road. Currently in the collection of J. H. Shepard.

71. **Erbia epipsodea epipsodea** Butler 1868: Apparently absent from the parks, but might occur in G.N.P. in Grizzly Creek area at 1890-2075 m.

72. **Oeneis jutta chermocki** Wyatt 1965: Suitable habitat is present in the Beaver River Valley in G.N.P. at 945-1219 m. A likely flight period would be late June to mide-July. May be biennial and missed on the off years.

Alpine species found on Mt. Begbie and Mt Cartier

1. **Pyrgus centaurae loki** (Evans 1953): 2316 m on Mt. Begbie. This species and *L. cupreus* may also occur on Mt. Cartier.
2. **Hesperia comma manitoba** (Scudder 1874): 2316 m on mt. Cartier.
3. **Pieris occidentalis occidentalis** (Reakirt 1866): 2286-2408 m on Mt. Begbie; 2469 m on Mt. Cartier.
4. **Colias nastes streckeri** (Grum-Grischimailo 1895): 2194 m on Mt. Begbie; 2347 m on Mt. Cartier.
5. **Lycaena cupreus henryae** (Cadbury 1937): 2225 m on Mt. Begbie.
6. **Agriades rustica megalo** (W. H. Edwards 1927): 2225-2732 m on Mt. Begbie; 1615-2316 m on Mt. Cartier.
7. **Boloria astarte astarte** (Doubleday and Hewitson 1847): 2225-2732 m on Mt. Begbie; 2408-2610 m on Mt. Cartier.
8. **Euphydryas anicia anicia** (Doubleday and Hewitson 1848): 2316 m on Mt. Begbie; 1646-2286 m on Mt. Cartier.
9. **Oeneis chryxus chryxus** (Doubleday and Hewitson 1849): 2316 m on Mt. Begbie; 2225-2316 m on Mt. Cartier.
10. **Oeneis melisa beani** Elwes 1893: 2732 m on Mt. Begfbie; 2469 m on Mt. Cartier.

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